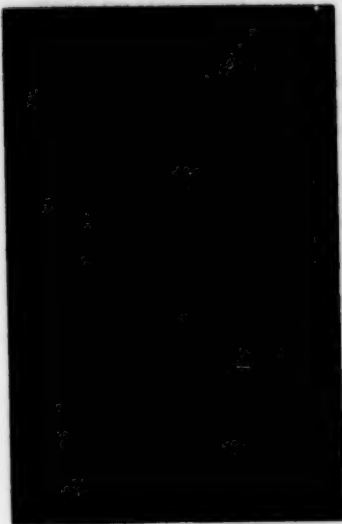




**Annual Report for
April 1, 1982 - March 31, 1983**

**Department of
Energy and Forestry**





TO HIS HONOUR

THE HONOURABLE JOSEPH AUBIN DOIRON
Lieutenant-Governor of Prince Edward Island

May it please your Honour:

I have the honour to submit herewith the Annual Report of the Department of Energy and Forestry for the fiscal year April 1, 1982 to March 31, 1983.

I have the honour to be, sir,

Your obedient servant,

Frederick L. Driscoll
Minister of Energy and Forestry

Charlottetown,
Prince Edward Island
December, 1983

INTRODUCTION

In October, 1982, the Department of Energy and Forestry was established. Previously the responsibilities for these areas were with Tourism, Industry and Energy and Agriculture and Forestry respectively. The challenge since that time has been to synthesize a new and dynamic Department of Government.

In recent years, these two areas have taken on a new prominence nationally. Energy, for its part, has been a key area of concern for governments and for the public generally since the formation of O.P.E.C. in the early 1970's. As well, there is a new concern and commitment to Forest Renewal and Resource Management.

Historically, forestry has played a vital role in the economic development of our province. Today there is still more than 50% of our land mass in forestry. It has the potential for the production of lumber, pulpwood, wood energy products and to contribute significantly to the economy of our Province.

During our first year, we continued to pursue dialogue with neighbouring provinces and the federal government to firm up our electrical supplies and arrest a worrisome trend toward inappropriately high electricity costs. Our parallel primary effort during that year was to assess our overall energy situation.

We discovered that, with respect to electricity, we were up against some long-standing and well entrenched practices in interprovincial electricity pricing. This has forced us to become more imaginative in our pursuit of industrially advantageous electrical supplies.

In our systematic evaluation of our provincial energy problem, we listened to various consumer groups, and we now have a clearer understanding of where we must act to maintain our economic momentum.

Also, we have looked about us in the Atlantic region to see how our neighbours use energy because we know we must compete in the same regional and export markets.

Finally, we have begun to expand our purview and activities to reflect the many facets of energy demand and supply which surround us. For example, we have increased our capability to monitor and supervise oil and gas exploration in the provincial offshore, where this past summer Chevron Canada Resources Ltd. was actively exploring for natural gas.

Vexatious though many of our problems may be, and however limited our native resources, we undertake these new initiatives in energy emboldened by the realization that we do have important strengths. For example, Prince Edward Islanders are skillful, economical users of energy. Consumption per household of some energy commodities is 2/3 the national average and Island industry uses energy sparingly, such that the intensity of energy use per capita in Prince Edward Island's economy was about 53% of that of per capita end-use energy consumption in Canada as a whole in 1981.

We had already in place numerous government extension programs to provide advice to Prince Edward Islanders as to how to best achieve energy conservation. Our industrial energy audit program has been particularly outstanding and a model for similar programs in other provinces.

On the energy supply side, we have the successful operation of the province's energy Crown corporation — the P.E.I. Energy Corporation — whose activities in alternative energy have led to immediate benefits for the province. For instance, the "Energy from Waste Plant" built in cooperation with the Province and the Federal Government, provides almost all the non-electrical energy needs of the Queen Elizabeth and Riverside Hospitals while disposing of up to 100 tonnes per day of municipal refuse.

The Energy Corporation will play a key role in developing the Province's extensive fuel-wood resource. The King's County Memorial Hospital wood-chip fired boiler system is but one example of their work in the proving of wood-fired energy technology.

Prince Edward Island entrepreneurs, in cooperation with the Energy Corporation and with the support of the Provincial Government, can look forward to being involved in opportunities to utilize forest biomass for industrial energy and residential energy purposes. This activity will also contribute to better forest management thereby leading to a higher quality timber resource. This last example demonstrates once again that energy strategy is an integral part of forest management and overall economic development at all levels.

Our challenge is to make energy available to Islanders at a competitive rate and at the same time to maximize use of our Forest Resource.

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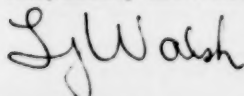
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Honourable Frederick L. Driscoll
Minister
Department of Energy and Forestry
P.O. Box 2000
Charlottetown, P.E.I.
C1A 7N8

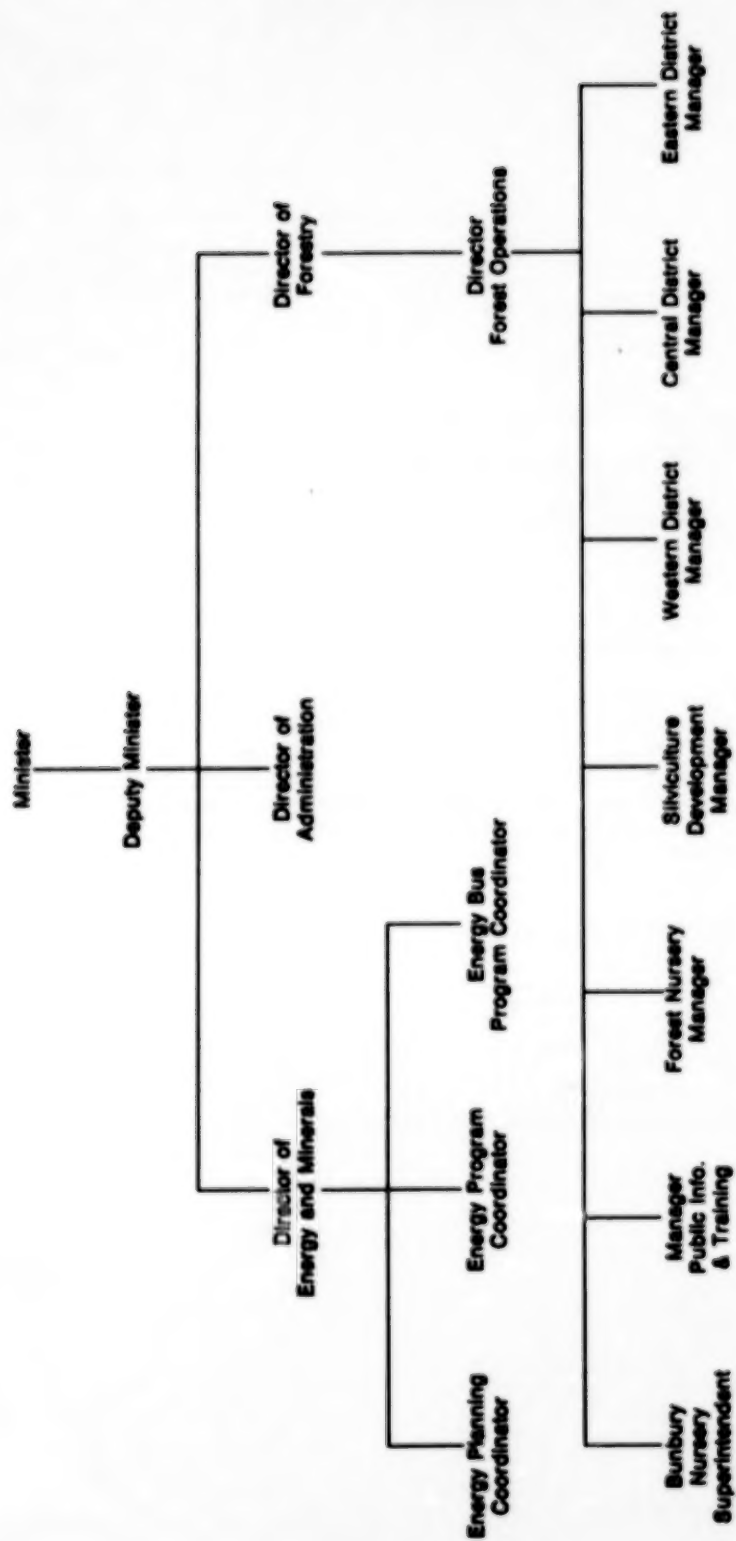
Dear Mr. Minister:

I am pleased to submit the Annual Report of the Department of Energy and Forestry for the fiscal year 1982-83. This report reflects not only the work done in energy conservation and forest management programs, but gives formal recognition to the importance of forest biomass for energy production within the Province.

Respectfully submitted,



Leo J. Walsh
Deputy Minister
Department of Energy and Forestry



ENERGY AND MINERALS BRANCH

Introduction

The principal responsibilities of this Branch included developing a viable energy policy, identifying acceptable new methods of generating energy, delivery of energy management programs, and monitoring and encouraging mineral exploration activities within the Province.

The principal outreach activity continued to be EnerSave for Industry and Commerce, which was delivered by the Province with the financial support of the federal government. The Branch also continued to deliver a wide variety of conservation, public awareness and education programs, and analytical capabilities were enhanced by the acquisition of an energy economist in the position of Energy Planning Coordinator.

In August 1982 work was begun on a comprehensive study of the Energy Alternatives available to P.E.I. This study was undertaken by Energy, Mines and Resources, Canada with provincial government and some consultant support. Another major consultant study completed during the fiscal year was a comprehensive analysis of the electric power supply problem on the Island.

Prince Edward Island is poor in energy resources by comparison with any other provincial jurisdiction in Canada. For that reason increasing attention is being given to the problem of making the best use of the available alternatives. Formal recognition of the importance of forest biomass in energy production came with the bringing together of the Energy and Forestry Branches in the new Department of Energy and Forestry in October 1982. It is hoped that one result of this administrative change will be better coordination of forest development in respect of energy on P.E.I.

Except for high electricity rates, P.E.I.'s energy prices were similar to those in other parts of Canada and supplies were secure. Recognizing the impact of the electrical cost disparity, the Government of P.E.I., primarily through its new Department of Energy and Forestry, concentrated greater efforts on finding ways in which electricity costs could be reduced by arranging cheaper, longer-term supplies of electrical energy from the mainland.

Table I demonstrates how similar are the prices of petroleum products across the country but how much higher were electricity rates in P.E.I. in 1982. This situation results from the fact that national policies and programs equalize crude oil prices to refineries across Canada; but no such policy applies to electricity. Furthermore, other provinces supply most of their electricity from inexpensive hydro power while almost all of the P.E.I. supply of electrical energy must, by virtue of our lack of water power, come from burning oil and coal.

COMPARATIVE ENERGY PRICES IN CANADA
(comparative index in brackets, P.E.I. = 100)

	Reg. Unleaded Gas (c/L)**	Home Heating Oil (c/L)**	Electricity (Res.) (\$/750 kWh/Mo.)*	Electricity (Ind.) (\$/400,000 kWh/Mo.)*
P.E.I.	49.2 (100)	30.5 (100)	75.75 (100)	36,785.45 (100)
N.F.D.	49.4 (100)	31.0 (102)	40.01 (53)	15,224.35 (41)
N.S.	45.2 (92)	29.5 (97)	37.38 (49)	16,411.08 (45)
N.B.	43.9 (89)	29.5 (97)	41.28 (54)	16,912.05 (46)
QUE.	51.9 (105)	29.8 (98)	27.15 (36)	13,724.60 (37)
ONT.	44.3 (90)	29.0 (95)	30.05 (40)	13,990.97 (38)
MAN.	40.3 (82)	28.7 (94)	24.67 (33)	9,257.30 (25)
SASK.	39.8 (81)	28.9 (95)	26.15 (37)	13,022.10 (35)
ALTA.	38.4 (74)	— —	29.84 (39)	13,199.45 (36)
B.C.	44.3 (90)	29.1 (95)	29.97 (40)	11,590.74 (32)
CANADA	45.0 (91)	29.4 (96)	29.99 (40)	13,487.81 (37)

*as at 1 January 1982

**1982 averages to September

Source: Energy Statistics Handbook, Energy, Mines and Resources Canada, Updates to September 1982.

Overall energy consumption declined in 1982-83. Electrical consumption remained about the same, but total petroleum products consumption decreased about 7% from 1981 to 1982 (down to 410,500 cubic meters in 1982 from 441,100 cubic meters in 1981.) Wood energy may have accounted for about 9-10% of total energy consumed in P.E.I. in 1982, trending upward.

The intensity of energy use in P.E.I. is lower than the Canadian average because of the absence of large concentrations of heavy industry and because of the conservation of energy by individuals. Energy conservation in P.E.I. may be attributed, in part, to the lower per capita incomes, but is also a reflection of the nature of the island society where conservation habits have been reinforced by Provincial government programs to advise homeowners, businesses and industries of energy savings opportunities.

The per capita consumption of energy in P.E.I. is about 6% of the Canadian average and has been measured at about 155 Gigajoules per capita per year (the energy content of about 881 gallons of heating oil). Of this, electricity accounts for about 9% of the energy consumed.

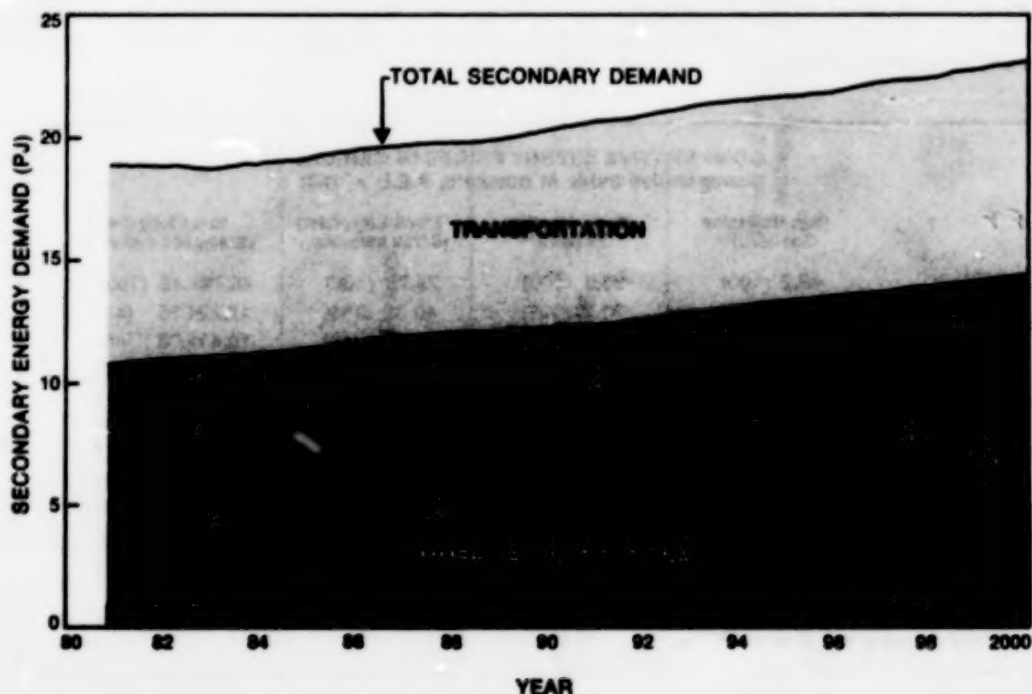
Transportation is the largest category for consumption, accounting for almost one-third of energy used on P.E.I., followed by residential heating applications.

Total energy consumption is expected to increase gradually in the next 20 years, as forecasted in Figure 1. Electricity consumption may increase by 2% per year, although petroleum will probably remain the basic energy source for P.E.I. for a long time to come.

Diversification of energy supply will thus remain an important goal for the Department of Energy and Forestry with a new emphasis on local energy resources.

Meanwhile, energy conservation remains the best short-term means of reducing cost to the individual consumer, and provincial programs relating to conservation and energy management continued to diversify and adapt to changing public needs.

FIGURE 1
P.E.I. SECTORAL AND ENERGY DEMAND PROJECTIONS



1. Energy

EnerSave for Industry and Commerce:

This program, funded under the Canada-P.E.I. Agreement on Industrial Energy Conservation, included a number of activities aimed at helping business, industry and institutions reduce their energy consumption. A second "Energy Bus" was acquired during the year, enabling two computer-equipped energy audit vehicles, staffed by two-person crews, to perform free energy audits on buildings in these sectors. A Consultant Advice Assistance Program helped fund needed post-audit consultant services. (Statistics for these two components of the program are summarized in Tables II and III.) The program also sponsored educational activities through energy conservation workshops and seminars. A variety of energy courses were put on during the fall in cooperation with Holland College, and a Municipal Energy Workshop was held in March. Demand for the energy audit service remained high throughout the year, and the addition of a second vehicle increased the rate at which audits could be done.

TABLE II
ENERSAVE FOR INDUSTRY AND COMMERCE
AUDIT SUMMARY
APRIL 1, 1982 TO MARCH 31, 1983

	No. of Visits	Annual Energy Bills Audited (\$)	Annual Potential Savings (\$)	% Average Savings
First Time Audits	118	1,769,400	347,580	20
Reaudits	29	1,649,386	325,441	20
GRAND TOTAL	147	3,418,786	673,021	20

TABLE III
CONSULTANT GRANT SUMMARY
APRIL 1, 1982 TO MARCH 31, 1983

No. of Clients	Total Grant Offered
4	\$14,884

EnerSave Update: This publication was published quarterly by the Energy Branch to promote the value of energy audits conducted under EnerSave for Industry and Commerce through the National Energy Audit Program.

P.E.I. EnerPool: The continued interest in this ride-sharing program resulted in negotiations being completed for a second 3-year lease for four new 15-passenger vans. Each full van is estimated to reduce gasoline consumption by 47,000 litres per year. The Energy Branch is a charter member of the Canadian Association of Vanpool Operators (CAVPO), which sponsored the development of ride-sharing programs across Canada.

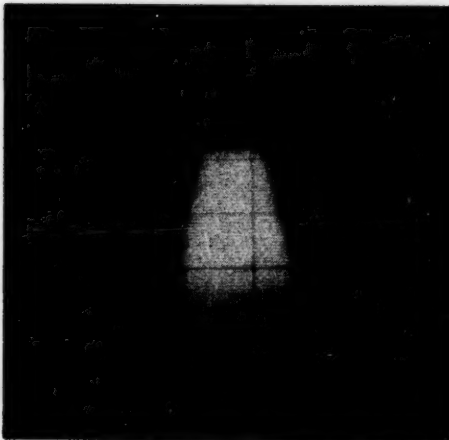
Infrared Thermography Program: Over 100 Island houses were given infrared thermography scans to detect areas of heat loss and cold air infiltration. Each homeowner received a record of the findings and a package of energy-related publications.



A second "Energy Bus" was acquired during the year which allowed the expansion of the free energy audit service conducted by Enersave for Industry and Commerce.



Energy and Forestry Minister Hon. Frederick L. Driscoll (above left) hands over the keys of a new EnerPool van to driver Bernard McKenna (right).



Areas of heat loss in uninsulated wall appear black in picture of infrared thermography scan.



An infrared exhaust gas analyser (above) measures levels of hydrocarbons and carbon monoxide in exhaust gas emissions. Analysers were available to auto mechanics who completed a training program sponsored by the Energy Branch.

EnerSave Information Service: The Branch responded to many written and telephone requests for information on a broad range of energy management concerns, maintained a reference library, published a monthly energy cost index and an annual Energy Update.

EnerSave School Bag: Packages of energy-related study materials were distributed to all elementary schools throughout the province. A poster contest was also held in these schools and the winning entries were included in a number of energy displays.

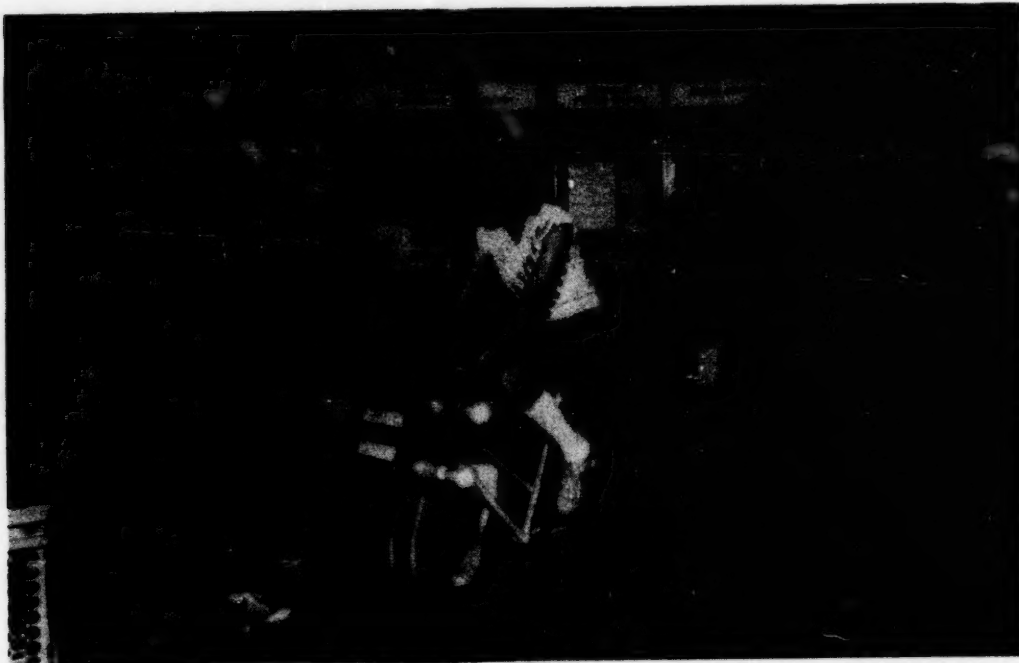
Display Program: Attractive portable displays demonstrating energy management techniques were set up at energy fairs, exhibitions and shopping malls across the Province.

Furnace Efficiency Tests: Seven furnace efficiency test kits are available free of charge for overnight or weekend loan; simple operational instructions are included with each kit. The kits are located at the Energy Branch offices in Charlottetown and at 5 Regional Services Centres across the Island.

In cases where a homeowner has difficulty in using the equipment or in interpreting the readings, Energy Branch staff will perform a follow-up test.

Auto-Fuel Economy and Emission Test Program (Triple E): Infrared exhaust gas analysers owned by the Energy Branch were available on a rental basis to mechanics who successfully passed a training program sponsored by the Branch.

Energy Education Activities: Working with representatives from Holland College, Institute of Man and Resources and the Department of Agriculture, the Energy Branch sponsored a series of workshops covering energy conservation techniques for residential and commercial application, renewable energy and farm energy management.



A visitor to the Energy display finds out how much "pedal power" it takes to generate electricity for 50-watt light bulbs. Displays were set up at community fairs and exhibitions across the Province.

Municipal Energy Management Committee: Coordinated by the Energy Branch, this committee worked with representatives of the Federation of P.E.I. Municipalities and the Department of Community Affairs to develop a comprehensive program on municipal energy management, including workshops and resource materials.

Canadian General Standards Board (CGSB): The Energy Branch was represented on the CGSB Certification Panel for Insulation Contractors which met regularly to review the work standards of the participating contractors.

Interprovincial Advisory Committee on Energy (IPACE): The Energy Branch contributes to a number of committees which have been active in various areas of energy concerns. IPACE reports annually to the Council of Provincial Energy Ministers.

P.E.I. has been particularly active on the 'demand restraint' sub-committee which during the past year has been under the chairmanship of Newfoundland. Having produced its Phase I and II reports in previous years detailing the ways in which the provinces could individually respond to a petroleum supply crisis, the committee members began deliberations on their Phase III mandate, which is to describe problems and solutions with respect to coordinating emergency energy demand restraint measures among the provinces, with the federal government and the oil companies and, if necessary, along the Canada/U.S. border. Participation in these committees is helpful to Prince Edward Island in its energy planning.

Intergovernmental Activities: Staff of the Energy and Minerals Branch participated with other jurisdictions (federal/provincial/municipal) to develop educational materials, coordinate conferences and discuss policy options.

Northeast International Committee on Energy (NICE): This Committee operates under the jurisdiction of the New England Governors' and Eastern Canadian Premiers' Conference. The committee sponsored a Municipal Energy Management Forum and Regional Renewable Energy Conference. This latter conference was hosted by Prince Edward Island in May, 1982, and was coordinated by staff of the Energy Branch. 150 delegates from the New England states and the Eastern Canadian provinces had an opportunity to learn of renewable energy projects within the region and attend workshops on new developments within this field.

Maritime Energy Education Coordinating Committee (MEECC): This committee operates under the jurisdiction of the Ministers of Energy and of Education in the three Maritime provinces. The committee sponsored the development of energy related resource materials including an Energy Education Bibliography and a Field Trip Guide. In November 1982 the committee coordinated an Energy Education Symposium for science consultants and selected senior high school teachers from each of the three Maritime provinces.



Staff of the Energy Branch coordinated a Regional Renewable Energy Conference which was hosted by the Province. Guests for the opening Dinner were (left to right) Hon. John Buchanan, Premier, Province of Nova Scotia; Mr. G.V. Subba Rao, Chief of Energy Unit, United Nations; (Laura Mair, Energy Program Coordinator); Gordon Well, Director, Maine Office of Energy Resources; Hon. James M. Lee, Premier, Province of Prince Edward Island. The conference was sponsored by the Northeast International Committee on Energy which operates under the New England Governors' and Eastern Canadian Premiers' Conference.

2. Oil, Natural Gas and Minerals

The Energy and Minerals Branch administers and enforces the Oil and Natural Gas Act, the Minerals Resources Act and Regulations under both. The Branch acts for the Province in negotiating exploration agreements, and, in cooperation with the Departments of Labour and of Fisheries and Industry, in assuring that local manpower, goods and services are used to the maximum where competitive.

In August 1982 a major exploration agreement was reached with Chevron Canada Resources Ltd., involving large acreages both onshore and in P.E.I. offshore areas. Extensive seismic and gravity surveys were carried out on Chevron's acreage, leading up to an exploratory well planned for 1983. In February 1983 exploration permits were issued to Texaco Canada Resources Ltd. to replace their earlier leases north of St. Peter's Bay.

H. W. van de Poll's report, "Geology of Prince Edward Island", was revised, professionally edited and prepared for publication by the Queen's Printer. It will be the first comprehensive account of the geology of the island to have been published since Confederation and it should do much to encourage the systematic investigation of the Province's mineral potential.

FORESTRY BRANCH

Introduction

The principal responsibilities of the Branch include the delivery of a comprehensive forest management assistance program for woodlot owners, the management of Crown forest land, research and development of new technology for fibre production and processing, and the provision of a marketing and technical advisory service to the forest industry. In addition, the Branch is responsible for forest fire control and the operation of Bunbury Nursery.

The Branch developed a five-year forest resource development plan and undertook negotiations with the Canadian Forestry Service, Environment Canada, leading to a new Forest Resource Development Agreement. The general objective of the plan is to maximize the economic benefits to provincial residents which are attainable from the forest resources of Prince Edward Island.

The use of wood as a source of renewable energy continues to increase. The success of the wood chip heating system at the Kings County Memorial Hospital in Montague has led a number of large industrial and institutional concerns to consider wood as a petroleum substitute. The demand for roundwood for domestic heating is estimated to have grown by 50% since 1980, and although pulpwood and sawlog production are down slightly, employment in the industry is stable.

The completion of the Forest Biomass Inventory, the first of its type in Canada, provides an accurate description of the existing resource and will serve as a basis for the development of a wood energy policy.

OPERATIONS

The Operations Section is responsible for seedling production, district operations, the Woodlot Management Incentive Program, the forest biomass inventory and the retail operation of Bunbury Nursery. Reforestation has remained constant at 1.2 million seedlings (Table I) with the ratio of private land planting versus Crown land being about 50:50. Contract planting has continued with almost 50% of the planting being done by two private firms.

Stand improvement on Crown land properties totaled 87.9 hectares and on private lands 800 hectares. Harvesting on Crown lands totaled 132.1 hectares.

TABLE 1. SUMMARY OF 1982 TREE PLANTING

District	Black Spruce	Eastern Larch	Red Pine	Jack Pine	White Spruce	Hybrid Poplar	Austrian Pine	Norway Spruce	Japanese Larch	Cedar	Total	%
Eastern	227,581	4,810	15,335	62,695	20,210	3,210	1,600		65,060	3,750	404,271	34
Central	76,329	19,054	18,219	30,402	19,414	19,075	4,000	533	500	900	210,545	18
Western	364,321	70,950	12,800	44,030	36,870	8,625	3,050		35,460	6,060	588,174	48
TOTALS	668,231	94,814	46,354	137,135	76,494	28,910	8,650	533	101,040	10,710	1,194,960	
% of TOTAL	56	8		11	6	3	1	—	9		1	

TABLE 2. NUMBER OF HECTARES SITE PREPARED IN 1982

Site Preparation Method	No. of hectares per District				Total
	East	Central	West	Crown	
Rome Disc	93	47	3	82	61
Plough/Disc Harrow	—	8	—	—	8
Bomag	—	—	29	24	5
Hydro-Axe	—	—	157	10	147
Eden Brush Rake	48	—	22	17	53
Tractor/Plow	—	—	3	—	3
Tractor/Rototiller	—	—	2	2	—



Tree length wood felled toward the trail, ready for extraction.



Hydro-Axe — site preparation equipment for slder removal.

Eastern District Operations

For the first time, planting site preparation was higher on private land than on Crown land with 108 and 73 hectares respectively. The majority of the site preparation was divided between the Rome Disc and the Eden Brush Rake (Table 2). Several small areas were prepared using such methods as chemical treatment, whole tree chipping and agricultural equipment.

Private contractors and government crews were responsible for planting 270,000 and 115,000 seedlings respectively. With the inclusion of pickup orders and Boy Scout plantings, a total of 404,000 trees were planted. Black spruce was the main species accounting for 56 percent of the total.

Stand improvement work on Crown land totalled 12 hectares of merchantable thinning. Government contracts were not called for as all the contractors were fully occupied on private land projects.

Thirty-seven hectares of plantation maintenance was undertaken using herbicides to control competition. Twenty-five fire calls which resulted in 36 hectares being burned were responded to by staff and volunteer fire departments.

Poor market conditions were reflected in the low response to commercial harvests on Crown land. Only 45 of the 90 hectares offered were purchased. Only 15 of 24 hectares offered as group venture fuelwood cuts were taken while all six hectares offered as tendered U-cuts were sold.

Wood harvested through employment projects on Crown lands was disposed of through public sale. Ninety percent of the 320 cords offered was sold.

District staff were heavily involved in public information programs through conducting tours, development of private land management plans, work at local fairs, work with community schools and service groups, and continued development of demonstration woodlots.

Central District Operations

Sixty-six hectares of land were planted in the Central District (28 hectares private and 38 hectares Crown) totalling 176,155 trees and an additional 15,875 trees being distributed through pickup orders and 20,000 trees for Boy Scout Arbor Day plantings. Planting trails of several red pine bare root stock were initiated and trail plantations of container-grown balsam fir were established on the lands of two Christmas tree growers. An allocation policy was devised for the distribution of balsam fir in 1983 - 1985.

Six Crown Land sites were thinned for a total of 55.2 hectares (98.5% softwood stands) and 7.8 hectares of plantations were treated with herbicides. One experimental application on 1.5 hectares was done with a new herbicide (triclopyr). The increased activity on Policy #5 lands resulted in a shift in the emphasis on site preparation from Crown land (19.5 hectares) to private land (28.2 hectares). The Rome Disc and Eden Brush Rake were used as mechanical scarifiers.

Policy #5 totals now include 265 applicants, 180 plans written and 123 plans signed. In the past year four new silvicultural contractors, employing up to 24 men, were active in the District in addition to three existing crews. District staff participated in the Brookvale Equipment Demonstration, and were active with youth groups, client tours, field days and other demonstrations.

Twenty-four fire calls were responded to (103 hectares burned) and one controlled burn was attempted with Western District staff.

A Management Plan was prepared in conjunction with the Royalty Oaks Management Committee for the natural area in East Royalty.

Western District Operations

During 1982 the Western District staff delivered a Forest Management Program encompassing both Crown and private land. District staff also tested a U-cut system whereby a contractor successfully tendered on standing wood then sold the wood in small quantities to the general public. Besides normal stumpage contracts being issued there were sales of harvested wood from the cleanup of old clearcuts and from commercial thinning.

Planting on Crown land totaled 314,395 seedlings, while on private land it totaled 259,779 seedlings. Although reforestation sites are not normally treated for competition until the year following establishment, a number of the Crown land areas were sprayed manually with glyphosate and simazine to eliminate excessive vegetative competition. Assessment of such plantation maintenance on the 1981 crop revealed an 85 percent reduction in competition and a 15 percent increase in leader growth.

A total of 179 hectares were site prepared in 1982, 82% of the area by the hydro-axe. Assessment of the impact of past site preparation techniques on frost heaving damage to seedlings is shown on Table 3.

During 1982, 120 applications were received for the Department's Forest Management Incentives Program. Staff wrote 85 plans of which 85 were signed.



Three windbreak systems: a sheared hedge, an unsheared hedge and a typical windbreak.

FOREST MANAGEMENT INCENTIVES PROGRAM

As a result of the work carried out under this program, the number of silvicultural workers employed by contractors has increased over last year. Improved efficiency of field and office staff has been achieved through the use of a computer to print forest management plans specific to each individual's woodlot. Program statistics and stand improvement activities are shown in Table 4 and Figure 1.

TABLE 3
PERCENT FROST HEAVING OF SEEDLINGS BY SITE PREPARATION TECHNIQUE
WESTERN DISTRICT

Site Preparation Equipment	Percent Frost-Heaved
V. Plow	17
Bomag	8
Bedding Plow	6.5
C & H Plow	2
Cutover (No prep.)	0
Craig Roller	0

TABLE 4
FOREST MANAGEMENT INCENTIVE PROGRAM STATISTICS 1982-83

Applicants to date (March 31, 1983)	914
Plans Written	748
Plans Signed	552

PROGRAM PERFORMANCE 1982 (APRIL - DECEMBER)

Roads	23 km.
Boundary	68 km.
Stand Improvement	883 ha.
Stand Reclamation	153 ha.
Site Preparation	191 ha.
 Total Incentive Grants	 \$524,900



Small woodlot extraction equipment - Yankee Yarder.

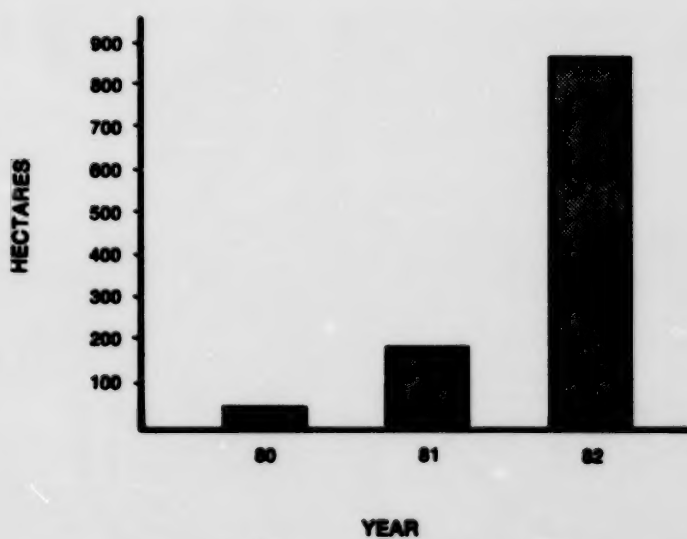


Figure 1. Stand Improvement on private land initiated through the Forest Management Incentives Program.

SILVICULTURAL DEVELOPMENT

Forest Biomass Inventory and Mapping

Biomass Inventory Data for the entire Province has been incorporated into the provincial computer system. The data base has been extended to include clear-cuts, plantations and alder stands. Area and volume of forested land as determined by the inventory is recorded in Table 5.

Stand mapping and data analysis was completed. Orthophoto base maps and forest cover type overlays at a scale of 1:10,000 are now available for the entire Province from the Silviculture Development Section at Upton Road Office. Requests for inventory information are being handled upon demand.

Local volume tables, total volume, merchantable volume and tree biomass for commercial tree species of the Province were completed and published.

Tree Improvement

The second of two black spruce plus tree seedling seed orchards was grown, to be outplanted in the spring of 1983. From these two orchards, seed of superior quality will be produced to supply the Province's reforestation program, beginning approximately 1985.

The target of 25 plus larch selections was not met but, of the 18 selected, six were graded as among the best in the Maritimes by the New Brunswick Tree Improvement Council.

The larch grafting program for the production of superior larch seed was a success.

In June 1981 an experiment was begun to determine the feasibility of growing fir under precisely controlled greenhouse conditions. This was a success, and another crop is being cultivated. The procedure — the first successful one for growing balsam fir throughout the winter in a greenhouse — could result in a two to three year reduction in growing plants for the Christmas Tree Industry.

A total of 41,000 seedlings were planted in 1982 in the development of seed orchards and growth trials of selected species.



International Treever forwarding eight-foot wood.

Silviculture

Silviculture research and development evaluates the various aspects of stand improvement work prescribed and practiced by the Forestry Branch.

Reforestation trials based on the relationship between site preparation method, planting stock type and species, established in 1980 and 1981, were measured in 1982. Base data measurements of growth responses to thinnings were collected for mixed hardwoods and white spruce stands.

TABLE 5
AREA AND TOTAL VOLUME OF STOCKED FOREST LAND BY
COVERTYPE ON PRINCE EDWARD ISLAND.*

TABLE 5 AREA AND TOTAL VOLUME OF STOCKED FOREST LAND BY COVERTYPE ON PRINCE EDWARD ISLAND.*					
	COVERTYPE**				
District	SW	SW/HW	HW/SW	HW	Total
Eastern					
Area(ha)	48,375	16,514	24,427	31,762	121,079
Volume (10 ⁶ m ³)	6.4	2.2	3.7	4.6	16.6
Central					
Area (ha)	16,841	7,897	10,729	11,244	46,577
Volume (10 ⁶ m ³)	2.3	1.0	1.5	2.4	7.2
Western					
Area (ha)	25,118	9,108	17,763	22,209	74,199
Volume (10 ⁶ m ³)	3.1	1.2	2.3	2.9	9.5
Total					
Area (ha)	90,313	33,310	52,909	40,892	217,537
Volume (10 ⁶ m ³)	11.8	4.4	7.2	9.9	33.3

*Extracted from the Forest and Biomass Inventory Executive Summary
**SW - Softwood, HW - Hardwood

*Extracted from the Forest and Biomass Inventory Executive Summary

**SW - Softwood, HW - Hardwood

A new series of technical articles, Development Notes, was initiated. Two "notes" were printed in 1982, one concerning productivity of equipment used in processing fuelwood, the other evaluating fuel wood extraction equipment. The National Research Council of Canada ENFOR project, begun in 1981, was completed in 1982. This project evaluated the economics of harvesting fuelwood in common stand types on P.E.I., using a variety of extraction equipment. A report on the project was published by the Maritime Forest Research Centre, Fredericton, in 1982.

The first Small Woodlot Equipment Demonstration was held at Brookvale in the fall of 1982. The positive response to this event guaranteed its annual occurrence.

FIELD SERVICES

Staff of the Field Services Section supply information to the public on Branch programs. They also provide technical information and training programs.

Public Information Activities

Twice weekly programs are made available to local radio stations and a monthly newsletter, Corner-Post, issued by the Department of Agriculture, contains a section on Forestry.

Section staff work closely with the local CBC-TV station in identifying and developing topics for use on a local resource-oriented program. This year a video tape was produced and used by District staff to promote an awareness of efficient woodlot management techniques prescribed under the Forest Management Incentives Program.

Training

A broad variety of formal and informal training programs were offered including part-time instruction for 15 people on a Woodlot Management Course and 10 people on a Business Management Course for Forestry Contractors both in cooperation with Holland College and the Management Development Fund.

Also undertaken were a Sawmill Seminar, a Diesel Troubleshooting Workshop for 30 people and training programs for students on the Windbreak Planning Project and participants on the U.I. Job Creation Project.

Field days were conducted including a Horse Logging Demonstration and Christmas Tree Shearing Demonstration, a tour to acquaint Canada Employment Centre Counsellors with forest industry problems and tours for individuals or small groups looking at Christmas Tree Production.

Industry Activities

The Forest Industry Specialist provides a technical advisory service to forestry firms directed toward the proper selection of equipment for millers and forestry contractors. A major effort this year has been to attempt to maintain wood harvesting and processing even with the slow economy. Table 6 shows utilization averages for all products in the forest resource industries.

A major initiative of the Forestry Branch in 1982 was to promote an organization to represent the concerns of woodlot owners and the forest industry sector. To date, local associations have been formed in each of the three forestry districts.

The Branch assisted an ad hoc forest industry group in developing presentations made to both Federal and Provincial levels of Government regarding forest development program funding. The same group presented a brief on wood energy.

Assistance was provided to silvicultural contractors in drafting a proposal to acquire U.I.C. and Canadian Forestry Service funding for a private woodlot program.

The Kings County Memorial Hospital wood fired heating system began operation on May 8, 1982. Its annual wood chip needs, estimated at 2000 tonnes, were supplied by a local contractor. Before the heating system was fired up, the contractor ran trials to determine average chip volumes produced from whole-tree harvesting in a typical Island stand type — white spruce too old to respond to thinning. Results determined were as follows: sawlog yield — 17 m³ per hectare (3 cords per acre); total chip yield — 204 tonnes per hectare.

**TABLE 6
PRIMARY FOREST RESOURCE INDUSTRIES
FOREST UTILIZATION***

Products	Equiv. m ³ Hardwood	Equiv. m ³ Softwood	Equiv. Total m ³
1. Lumber Products			
Construction Lumber	15,600	60,000	75,600
Farm Lumber	1,200	24,000	25,200
Sub Total	16,800	84,000	100,800
2. Pulpwood			
Softwood	—	60,000	60,000
Hardwood	—	—	—
Sub Total	—	60,000	60,000
3. Pulpwood Chips	—	—	—
4. Wood Residues	2,400	16,800	19,200
5. Fuelwood	134,600	10,600	145,200
6. Posts & Poles	1,000	2,100	3,100
7. Boltwood Products	—	2,900	2,900
8. Miscellaneous	1,200	1,200	2,400
Sub Total	139,200	33,600	172,800
TOTAL	156,000	177,600	333,600

*These figures are based on "Best estimates." Average of 1979-81.

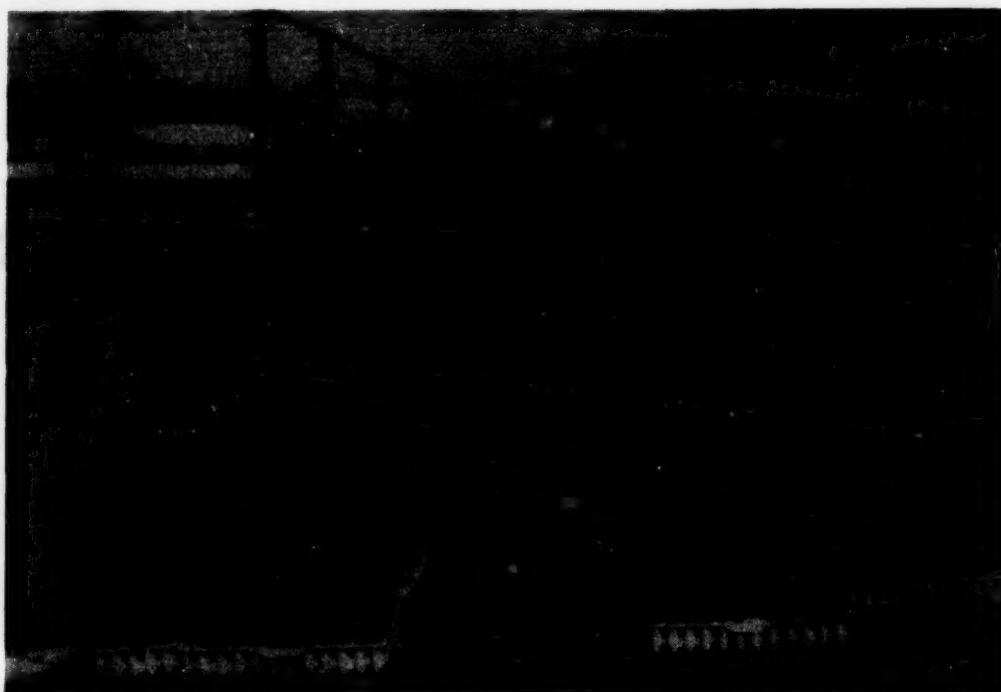
FOREST NURSERY

Bare root and container production of reforestation stock totalled 1.2 million seedlings in 1982. Nine species were produced for client use with major emphasis being on black spruce, eastern larch and red pine. Late in the season a large quantity of jack pine container stock was sold to a New Brunswick company, Boise - Cascade, for reforestation. These trees were surplus to provincial needs for jack pine.

This year a relatively unique approach to seedling production was undertaken with eastern larch. Due to a poor cone crop, few seeds were collected. This necessitated the use of vegetative propagation techniques whereby cuttings from selected trees were rooted in a growing medium and grown to a suitable size for outplanting.

The winter crop of seedlings planted in the production greenhouses in the fall of 1982 is being grown in a new, larger, Maritime-produced container called the Can-Am 3. This container will result in larger seedlings for reforestation projects on more difficult and exposed sites.

Following the successful growth of balsam fir in the Forestry Branch's research greenhouses, the seedlings for the future Christmas Tree plantations are now being grown in the production houses.



One year old white spruce seedlings in holding area.

BUNBURY NURSERY

Revenue from the sale of nursery stock showed an increase over the 1980-81 and 1981-82 periods. The demand for trees, shrubs and woody plant material was good from individual home owners. Fall bulb sales were down in 1982, as they were over the region as a whole.

The number of new home owners seeking landscape advice was down due to a lack of new home construction; however, requests for advice on gardening increased. The most noticeable increase in 1982 was for identification of insects and diseases.

Bedding Plant Trials continued in 1982 and Shrub Trials, in cooperation with the Atlantic Crops Advisory Committee on Ornamentals and Greenhouse, was started on P.E.I.

The Bedding Plant material was produced at Bunbury Nursery and planted at the Research Station in Charlottetown for public viewing. Response from the bedding plant industry and the general public has been good. The end result is to find the varieties best suited to local conditions.

The Shrub Trials were started at the Nursery by planting 34 varieties (100 plants) — many had not been grown in the Atlantic area to any degree. The evaluation will start in 1983 after the plants complete their first winter.

A number of radio and television shows were completed for local programming and annual commitments to education and judging events were met.

Several buildings on the Nursery were repaired by the Department of Public Works in 1982, with the connection of the unit to the Village Sewage system being the largest project.

ENVIRONMENTAL MANAGEMENT

This multidiscipline project to develop environmentally acceptable forest management guidelines was expanded from its western base in Enmore. Assessment equipment was located on a Forestry Demonstration Woodlot in Valleyfield. Results from both areas, although preliminary at Valleyfield, indicate that there are no significant environmental problems caused by intensive forest management practices. Certain mammal and plant communities are influenced but the changes appear to create a diversity of sites for other species to move into.

Water quality assessments show that careful implementation of forest road construction guidelines as well as stand and site improvement work do not cause stream siltation or water temperature fluctuations.

C.E.I.C.

Several programs jointly sponsored by Federal and Provincial governments were participated in this year. During the summer of 1982, 24 students were employed to develop windbreak planting plans. The program was well received and should result in upwards of 200,000 trees being planted in 1983. As a follow-up to this program a project to assess windbreak quality and design was established under the Canada-Prince Edward Island Job Creation Agreement.

Other projects under this Agreement include stand improvement work in Provincial Parks, clearing on Provincial Highways, and maintenance of site lines for the provincial survey monument system.

DEPARTMENT OF ENERGY AND FORESTRY

FINANCIAL STATEMENT FISCAL YEAR 1982-1983

EXPENDITURES

Departmental Management	\$293,488	\$293,488
Energy & Minerals Branch		
Branch Management	124,705	
Canada/P.E.I. Energy Agreement	372,257	
Maritime Electric Tax Rebate	839,417	1,336,379
Forestry Branch		
Branch Management	198,533	
Operations	889,120	
Eastern District	514,639	
Central District	422,904	
Western District	427,901	
Bunbury Nursery	151,480	
Tree Farm	436,096	
Field Services	128,350	
Environmental Management	102,005	
Forestry Winter Projects	59,393	
Provincial Youth Development	5,198	
Site Line Clearing	21,162	
Provincial Parks Forest Management	123,633	
Greater Ch'town Environmental District	41,868	
Hedgerow-Shelterbelt Project	18,008	
Forest Access Roads	25,739	3,566,029
		\$5,195,896

DEPARTMENT OF ENERGY AND FORESTRY

**FINANCIAL STATEMENT
FISCAL YEAR 1982-1983**

REVENUES

Energy & Minerals Branch

Gas & Oil Licenses	\$343,505
Fees & Services	2,355
Sales (miscellaneous)	8

Forestry Branch

Operations	
Sales (miscellaneous)	439
Eastern District	
Sales (miscellaneous)	969
Sales (Forestry supplies)	350
Central District	
Sales (miscellaneous)	866
Sales (Forestry Supplies)	733

Bunbury Nursery	
Sales	78,749

Tree Farm	
Sales	11,346

Forestry Winter Projects	
Sales (miscellaneous)	10,538

Principal Parks Forest Management	
Sales (Forest Supplies)	5,046

\$454,904



POOR

QUALITY

ORIGINAL